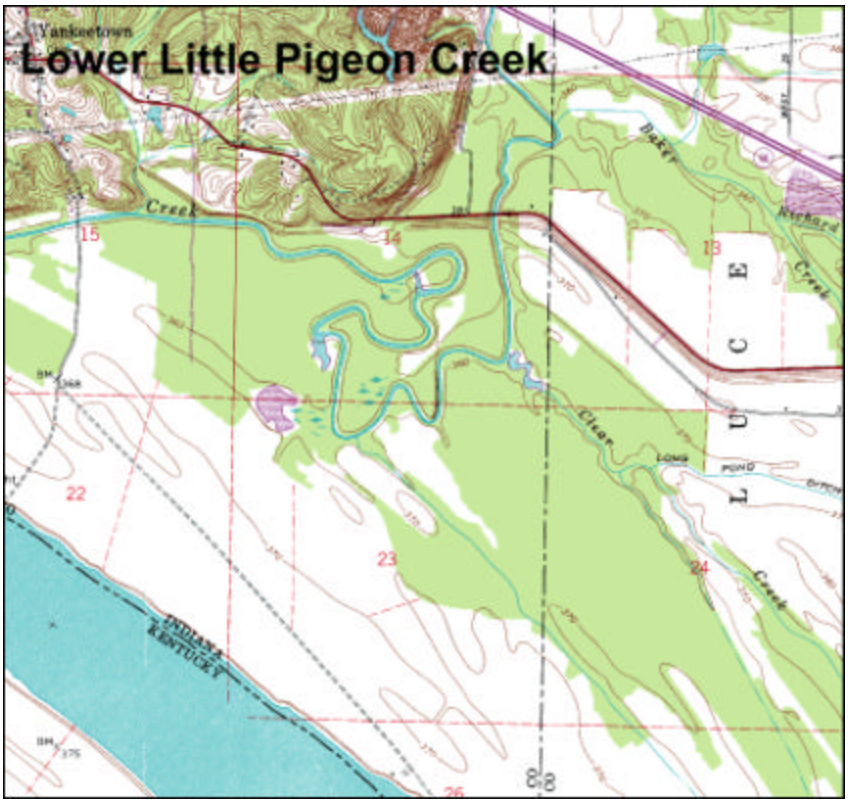
LOWER LITTLE PIGEON CREEK HABITAT PROTECTION AND RESTORATION (IN-28)

1.0 Location

The proposed Lower Little Pigeon Creek Habitat Protection and Restoration project is located in Warrick County, Indiana near the town of Yankeetown, Indiana. The project area is in the Lower Little Pigeon Creek watershed near the Ohio River, Newburgh Pool at river mile 772. The project site is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).



2.0 Project Goal, Description, and Rationale

The primary goal for the Lower Little Pigeon Creek Habitat Protection and Restoration project is the acquisition and protection of land in the Little Pigeon Creek floodplain. Some areas have already been acquired, and several other tracts have been identified for consideration. Land acquisition would allow managers to enhance existing habitat for wetland related species. Reforestation of several areas would be considered.

Aerial photo of lower Little Pigeon Creek

3.0 Existing Conditions

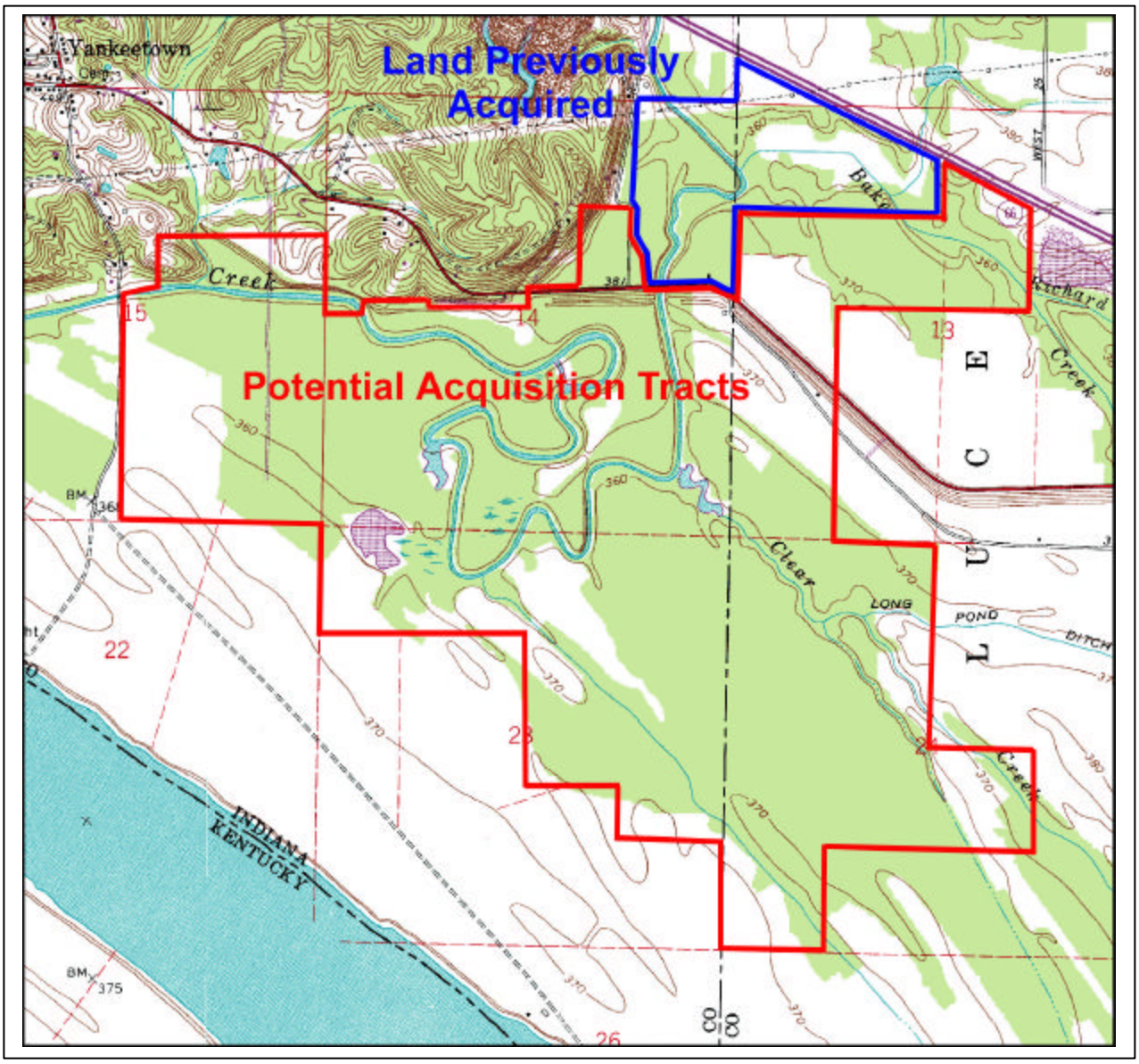
Terrestrial/Riparian Habitat: The terrestrial and riparian resources on the project area consisted mainly of a vegetated riparian corridor along lower Little Pigeon Creek. The dominant tree species in the area were silver maple (*Acer saccharinum*) and green ash (*Fraxinus pennsylvanica*).

Aquatic Habitats: Aquatic resources on the area included several small backwater sloughs. During high flow events, the bottomland timber in the riparian zone is inundated by overbank flooding from the sloughs.

Wetlands: The wetland resources on the project area included areas of bottomland forest and most of the small backwater sloughs.

Federally-Listed Threatened and Endangered Species: According to the U.S. Fish and Wildlife Service (USFWS), there are no federally-listed threatened or endangered species known to occur in Warrick County, Indiana.

4.0 Project Diagram



5.0 Land Acquisition and Reforestation

5.1 Land Acquisition

Land acquisition for the Lower Little Pigeon Creek project area would be accomplished through purchase of land from willing sellers within the project area. Approximately 148 acres from four tracts of privately owned land have already been acquired. An additional eleven tracts of land, with acreages ranging from 6 to 675 acres, are under consideration for future acquisition if willing sellers become available. The eleven tracts of land under consideration total approximately 1,350 acres.

5.2 Reforestation

Approximately 20 acres would be reforested with native mast producing bottomland hardwood trees. Soil types, hydrology, and terrain position would be the primary factors considered when selecting the tree species to be planted, and a detailed planting design should be developed in order to insure that the planting effort is successful. Typical bottomland species to be planted in the floodplain area would include pin oak (*Quercus palustris*), swamp chestnut oak (*Quercus michauxii*), swamp white oak (*Quercus bicolor*), pecan (*Carya illinoensis*), and shagbark hickory (*Carya ovata*). Aggressive light mast producing species, such as silver maple (*Acer saccharinum*), green ash (*Fraxinus pennsylvanica*), sycamore (*Platanus occidentalis*), and/or willows (*Salix* spp), would be expected to regenerate naturally.

- Nursery stock for reforestation would be obtained from a State of Indiana Nursery.
- Bare root seedlings would be used and planted at a rate of 300 trees/acre.

6.0 Cost Estimate (Land Acquisition and Reforestation)

Table 1. Land Acquisition and Reforestation	
Item	**Cost**
Management Plan	$5,000
Land Acquisition (1,350 acres)	$1,350,000
Reforestation (130 acres)	$28,900
Mobilization	$3,600
TOTAL	**$1,387,500**

7.0 Schedule

Table 2. Project Schedule	
Item	**Time**
Management Plan	1 Year
Land Acquisition	1-5 years
Reforestation	1-5 years
Mobilization	1 Year
TOTAL	**5 Years**

8.0 Expected Ecological Benefits

Terrestrial/Riparian Habitats: There would be beneficial impacts to terrestrial and riparian resources as a result of implementing the proposed project. Acquisition and protection of the riparian corridor would provide habitat and travel corridors for numerous resident and migratory wildlife species utilizing the project area.

Aquatic Habitats: Acquisition of the riparian corridor would benefit aquatic resources in the project area. Protection of the riparian corridor would allow managers to implement management practices to reduce the amount of erosion and sediment entering the water column.

Wetlands: Protection and enhancement of the project area would benefit wetland species such as waterfowl, shorebirds, and wading birds. Also, the copperbelly watersnake is known to occur in the project area and habitat enhancement would benefit this species.

Federally-Listed Threatened and Endangered Species: Since there are no federally-listed threatened or endangered species in the Warrick County, no foreseeable beneficial impacts to endangered or threatened species would result from the implementation of this project.

Socioeconomic Resources: Socioeconomic resources in the project area would benefit as a result of implementing the proposed project. Increased recreational opportunities such as hunting and wildlife viewing opportunities would result from the project.

9.0 Potential Adverse Environmental Impacts

Terrestrial/Riparian Habitats: There would be no reasonably foreseeable adverse impacts to terrestrial or riparian resources as a result of implementing the proposed project.

Aquatic Habitats: There would be no reasonably foreseeable adverse impacts to aquatic resources as a result of implementing the proposed project.

Wetlands: There would be no reasonably foreseeable adverse impacts to jurisdictional wetland resources as a result of implementing the proposed project.

Federally-Listed Threatened and Endangered Species: Since there are no federally-listed threatened or endangered species in the project county, no foreseeable adverse impacts would result from this project.

Socioeconomic Resources: There would be no reasonably foreseeable adverse impacts to socioeconomic resources as a result of implementing the proposed project.

10.0 Mitigation

Minor impacts associated with site reforestation may occur during the implementation of this project, however, no significant adverse impacts are expected. The use of best management practices would minimize any potential impacts. No other mitigation would be necessary for this project.

11.0 Preliminary Operation and Maintenance Costs:

There would be no operation or maintenance costs associated with this project. Evaluation of seedling survival would need to be investigated before additional plantings would be considered.

12.0 Potential Cost Share Sponsor(s)

- Indiana Department of Natural Resources
- Waterfowl USA
- Indiana Heritage Trust
- North American Waterfowl Management Plan
- Wild Turkey Federation
- Private hunting clubs

13.0 Expected Life of the Project

As presently envisioned the Lower Little Pigeon Creek project area would be managed in perpetuity for the benefit of natural resources by the Indiana Department of Natural Resources.

14.0 Hazardous, Toxic, and Radiological Waste Considerations

Potential impacts of hazardous, toxic, and radiological waste (HTRW) at the site were visually assessed during a site visit.

Site Inspection Findings.

The project site involves floodplain lands adjacent to the Waterfowl USA tract near the mouth of Little Pigeon Creek at the creek's confluence with the Ohio River at river mile 773. The restoration area is in Warrick County, Indiana.

The following environmental conditions were considered when conducting the June 30, 1999 project area inspection:

- Suspicious/Unusual Odors;
- Discolored Soil;
- Distressed Vegetation;
- Dirt/Debris Mounds;
- Ground Depressions;
- Oil Staining;
- Above Ground Storage Tanks (ASTs);
- Underground Storage Tanks (USTs);
- Landfills/Wastepiles;
- Impoundments/Lagoons;
- Drum/Container Storage;
- Electrical Transformers;
- Standpipes/Vent pipes;
- Surface Water Discharges;
- Power or Pipelines;
- Mining/Logging; and
- Other.

None of the environmental conditions listed above were observed on the project area.

15.0 Property Ownership

Selected data on properties immediately adjacent to or within each concept site was collected from the county courthouse of the respective county of each site. Data collected included map and parcel identification number, property owner's name and mailing address, acreage of the potentially affected parcel, and market value of the parcel. This procedure involved obtaining a plat or parcel map of the site and surrounding area which identified each parcel with a corresponding map and parcel number. The map/parcel identification number was

subsequently used to determine the property owner's name and mailing address from records in the County Assessor's or County Auditor's office. Plat/parcel maps were collected for each site.

The market value of each parcel as contained in the property tables reflects the assessed valuation to supposedly market value ratio used in each State for taxation purposes. These assessed values reflect 1998 assessments. The assessed valuation ratio is 33.3 percent for Indiana.

The above ratios were used to approximate the market value of each property. However, in many instances the resultant market value calculated under the above procedure is considerably below the actual value of the land in the real market. Local real estate brokers could provide a more accurate estimate of actual land values.

The collected property data indicate that private lands are adjacent to the Lower Little Pigeon Creek Habitat Protection and Restoration area. Private lands will be needed and/or disturbed for this project. The majority of the property under consideration is in private ownership, therefore easements or other agreements will need to be made prior to further progress.

Table 3. Property Characteristics
Site Name: Lower Little Pigeon Creek *(Land Values Only)* **Location: Spencer County and Warrick County, Indiana**
Assessed valuation data collected for approximately a dozen parcels in Sections 9, 16 and 20 on the Chrisney Quadrangle revealed a market value approximating $1000/acre. This is based on the assessed valuation ratio to "market" value (33.3% in Indiana) for taxation purposes based upon 1995 assessed values. However, as noted by all the County Assessors, this ratio does not represent a reflection of true market values as the actual land values and sales prices are considerably higher. Local real estate sources should be used for more accurate information on current land prices within the area.

APPENDIX A Threatened & Endangered Species

APPENDIX B Plan Formulation and Incremental Analysis Checklist

Project Site Location: The proposed Lower Little Pigeon Creek Habitat Protection and Restoration project is located in Warrick County, Indiana near the town of Yankeetown, Indiana. The project area is in the Lower Little Pigeon Creek watershed near the Ohio River, Newburgh Pool at river mile 772. The project site is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).

Description of Plan selected: The primary goal for the Lower Little Pigeon Creek Habitat Protection and Restoration project is the acquisition and protection of 118 acres in the Little Pigeon Creek floodplain. Land acquisition would allow managers to enhance existing habitat for wetland related species. Reforestation of a portion of one of the properties has been proposed.

Alternatives of the Selected Plan:

Smaller Size Plans Possible? Yes and description

Reduce the amount of the land acquisitions.

Larger Size Plan Possible? Yes and description

Increase the amount of the land acquisitions.

Other alternatives? No

Restore/Enhance/Protect Terrestrial Habitats? Yes **Objective numbers met** T1,T3

Restore, Enhance, & Protect Wetlands? Yes **Objective numbers met** W1

Restore/Enhance/Protect Aquatic Habitats? Yes **Objective numbers met** A8

Type species benefited: Resident and migratory wildlife and riverine fishes

Endangered species benefited: None

Can estimated amount of habitat units be determined: 130 acres reforested, 1,350 acres acquired

Plan acceptable to Resources Agencies?

U.S. Fish & Wildlife Service?

State Department of Natural Resources? Indiana Dept. of Natural Resources

Plan considered complete? Yes **Connected to other plans for restoration?** No

Real Estate owned by State Agency? Federal Agency?
Real Estate privately owned?
If privately owned, what is status of future acquisition

Does this plan contribute significantly to the ecosystem structure or function requiring restoration? What goal or values does it meet in the Ecosystem Restoration Plan?

Yes This plan increases the amount of riparian habitat and increased habitat diversity.

Is this restoration plan a part of restoration projects planned by other agencies? (i.e. North American Waterfowl Management Plan, etc.)

Unknown

In agencies opinion is the plan the most cost effective plan that can be implemented at this location?

Can this plan be implemented more cost effectively by another agency or institution?
Yes / No
Who:

From an incremental cost basis are there any features in this plan that would make the project more expensive than a typical project of the same nature? For embayment type plans is there excessive haul distance to disposal site? More expensive type disposal? Spoil that requires special handling/disposal?

Potential Project Sponsor:

Government Entity:_____
Non-government Entity _____

Corps Contractor _____Date_____

U.S. Fish & Wildlife Representative _____Date_____

State Agency Representative _____Date _____

U.S. Army Corps of Engineers Representative _____Date _____

Terrestrial Habitat Objectives

T1 Riparian Corridors

T2 Islands

T3 Floodplains

T4 Other unique habitats (canebrakes, river bluffs, etc.)

Wetland Habitat Objectives

W1 Forested Wetlands: Bottomland Hardwoods

W2 Forested Wetlands: Cypress/Tupelo Swamps and other unique forested wetlands

W3 Scrub/Shrub Emergent Wetlands: isolated from the river except during high water and contiguous (includes scrub/shrub wetlands in embayments and island sloughs)

Aquatic Habitat Objectives

A1 Backwaters (sloughs, embayments, oxbows, bayous, etc.)

A2 Riverine submerged and aquatic vegetation

A3 Sand and gravel bars

A4 Riffles/Runs (tailwaters)

A5 Pools (deep water, slow velocity, soft substrate)

A6 Side Channel/Back Channel Habitat

A7 Fish Passage

A8 Riparian Enhancement/Protection

APPENDIX C Micro Computer-Aided Cost Engineering System (MCACES)